

REMARKS/DISCUSSION OF ISSUES

Claims 1 and 3-19 are pending in the application.

CLAIM OBJECTIONS

The Office Action objected to claims 4 and 5.

Applicants respectfully submit that, by this Amendment, the objections to claims 4 and 5 have been overcome.

35 U.S.C. § 102/103

The Office Action rejected claims 1 and 3-5 under 35 U.S.C. § 102 and 103 over Morimoto et al. U.S. Patent No. 4,542,317 ("Morimoto"); claims 1, 3 and 5-14 under 35 U.S.C. § 103 over Khan et al. U.S. Patent No. 6,034,752 ("Khan"); and claims 1, 3 and 15-19 under 35 U.S.C. § 103 over Young et al. U.S. Patent 6,153,254 ("Young").

Applicants respectfully traverse those rejections for at least the following reasons.

Morimoto

Claim 1

Among other things, the display device of claim 1 includes a conductor layer that, at least within a viewing area of the display device, substantially completely covers a corresponding part of the substrate.

The Office Action states that FIG. 7 shows "a conductor pattern 12 and 13."

Applicants respectfully disagree.

The embodiment shown in FIG. 7 of Morimoto does not include any element 13. No element 13 is shown in FIG. 7, nor is it described anywhere in the specification with respect to FIG. 7. The Office Action states that wiring conductors L of FIG. 7 are "made up of anode conductors 13." However, the Office Action cites

1 The Office Action stated that claims 1, 3 and 5-19 were rejected over Khan, but there is no further mention of claims 15-19 in the discussion of Khan. Applicants' representative Mr. Springer spoke with the Examiner about this on 26 February 2004 and the Examiner indicated that this was a typographical error and that at this time only claims 1, 3 and 5-14 are rejected over Khan.

nothing whatsoever in support of this proposition. Applicants respectfully traverse this statement and respectfully submit that Morimoto does not disclose any element 13 in the embodiment of FIG. 7.

Applicants specifically traverse the statement in the Office Action that col. 7, lines 3-23 of Morimoto teaches that the "sole difference" between the embodiments of FIGs. 2 and 7 is that the embodiment of FIG. 7 provides separate wiring conductors L for the anodes 15. The cited text makes no mention whatsoever of any "sole difference."

The Office Action further states that "[e]ven without the parts 13, the metal film 12 alone in FIG. 7 substantially completely covers the substrate."

Applicants respectfully disagree.

FIG. 7 clearly shows numerous large, gaping openings P in the metal film 12 to define the seven segments of the seven segment display! Meanwhile, in the specification Applicants have clearly defined the term "substantially completely" to mean that the conductor pattern fills at least 80% of the viewing area (page 2, lines 1-3). Neither any text in Morimoto nor any inspection of FIG. 7 would indicate that the metal layer 12 fills at least 80% of the viewing area of the device. Indeed, Morimoto does not appear to delineate the viewing area of the device of FIG. 7, but there would typically be no reason for it to be much larger than the area occupied by the seven segments or openings "P." So Applicants respectfully submit that Morimoto does not disclose in the device of FIG. 7 that, at least within a viewing area of the display device, the metal layer 12 substantially completely covers a corresponding part of the substrate.

Therefore, Applicants respectfully submit that FIG. 7 of Morimoto does not show any device wherein, at least within a viewing area of the display device, a conductor pattern substantially completely covers a corresponding part of the substrate.

Also among other things, in the display device of claim 1, the parts of the conductor pattern which define pixels are substantially mutually separated by partitioning paths having a minimal path width defined by process parameters for

fabricating the conductor pattern.

Applicants respectfully submit that no such feature is disclosed or suggested by Morimoto.

The Examiner has attempted to define "minimal path width" as simply a "very small or slight" path width, in accordance with a conveniently-selected one among many definitions for "minimal" provided by Miriam-Webster's Collegiate Dictionary, Tenth Edition.

Applicants respectfully submit that the application of such a dictionary definition is not in accordance with the proper rules of claim interpretation under the law, and as expressed by M.P.E.P. § 2111.01, which states that Applicants may provide their own particular definition of a claim term in the specification, as long as the meaning assigned to the term is not repugnant to a term's well known usage (citing In re Hill, 161 F.2d 367, 73 U.S.P.Q. 482 (C.C.P.A. 1947)).

The Office Action states that Applicant's have not clearly defined the term "minimal path width" and that the Examiner may therefore resort to the dictionary definition that he selected.

Applicants respectfully disagree.

At the outset, Applicants submit that they have sufficiently clearly defined minimal path width as follows:

"The maximum distance between parts of the conductor pattern is **defined** in that parts of the conductor pattern are mutually separated by partitioning paths having a **minimal path width**. As stated, this distance depends on **process parameters** but particularly on the tolerances of the photolithographic process used. . . .

Although the words 'minimal path width' are used in this context, it will be evident that this minimal path width will not have a constant value in practice, but may locally vary to some extent due to the influence of, for example, etching rates, dust particles, or other influences."

(Specification at page 2, lines 24-33) (emphasis added); and

“the minimal path width between parts of the conductor pattern is introduced on the basis of process parameters”

(Specification at page 3, lines 7-8) (emphasis added); and, again:

“The conductor paths are designed in such a way that the partitioning paths 13 have a minimal path width substantially throughout (defined by tolerances of the manufacturing process, such as minimal mask distance, layer thicknesses, etching properties, etc.).”

(Specification at page 4, line 32 - page 5, line 1) (emphasis added); and, yet again

“this information, together with the minimal path width of the paths 13 between parts 4 of the conductor pattern (as defined by process parameters) is introduced”

(Specification at page 6, lines 11-12).

Therefore, it is respectfully submitted that the Applicants have *repeatedly* indicated in the Specification a specific definition of the claim term “minimal path width” as pertaining to a minimal path width that can be provided by available process parameters, such as, photolithography tolerances.

Now, such a definition has been explicitly recited in claim 1.

Furthermore, M.P.E.P. § 2111 states that the claim terms must be “given the broadest reasonable interpretation consistent with the specification” (emphasis added). Applicants respectfully submit that the dictionary definition selected by the Examiner is not consistent with the specification, as noted above. M.P.E.P. § 2111 states that “the PTO applies to verbiage of the proposed claims the broadest reasonable meaning of the words in their ordinary usage as they would be

understood by one of ordinary skill in the art, **taking into account whatever enlightenment by way of definitions or otherwise that may be afforded by the written description** contained in applicant's specification" (emphasis added). Note that any enlightenment provided by the specification is to be taken into account even if specific definitions are not provided as they were here. Furthermore, M.P.E.P. § 2111 provides only that any special meaning assigned to a term must be sufficiently clear in the specification that any departure from common usage would be so understood by a person of experience in the field of the invention.

In view of the numerous citations to the specification provided above, and the recitation in claim 1, Applicants respectfully submits that this requirement has been more than satisfied.

Accordingly, Applicants having provided a clear definition of "minimal path width" in the specification **and in claim 1** as being defined by process parameters, and therefore it is respectfully submitted that Examiner's substitution of a dictionary definition of "vary small" is improper.

The Office Action stated that: (1) Morimoto discloses in FIG. 7 a feature wherein the partitioning paths having a minimal path width defined by process parameters for fabricating the conductor pattern ("102 Basis"); and (2) in any event, it would just be obvious to have the partitioning paths be of a minimal path width ("103 Basis").

Applicants respectfully disagree.

As to the "102 Basis," the Office Action cites col. 8, lines 24-27 in Morimoto as allegedly teaching or suggestion partitioning paths having a minimal path width.

Applicants respectfully disagree.

At the outset, Applicants respectfully submit that col. 8, lines 24-27 does not pertain to the embodiment of FIG. 7 which is cited as allegedly disclosing the device Applicant's claim 1.

Furthermore, the cited text only mentions that sections of the nontransparent conductive film 12 are separated by narrow slits. Meanwhile, Applicants respectfully submit that the slits S shown and described with respect to FIG. 7 are not described

or shown to be "narrow." Indeed, the slits are sufficiently wide to accommodate wiring conductors L therein. Such slits therefore can not have a "minimal path width defined by process parameters used for fabricating the conductor pattern" as recited in claim 1.

As to the "103 Basis," M.P.E.P. 2143.01 provides that:

"THE PRIOR ART MUST SUGGEST THE DESIRABILITY OF THE CLAIMED INVENTION"

and

"The level of skill in the art cannot be relied upon to provide the suggestion to combine references. Al-Site Corp. v. VSI Int'l Inc., 174 F.3d 1308, 50 USPQ2d 1161 (Fed. Cir. 1999)."

See also, In re Lee, 61 USPQ2d 1430, 1434 ("the examiner can satisfy the burden of showing obviousness of the combination only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead the individual to combine the relevant teachings of the references").

Here, the Office Action fails to cite anything in support of the conclusory rejection. In particular, the Office Action fails to cite anything in the prior art suggesting that making partitioning paths having a minimal path width defined by process parameters used for fabricating the conductor pattern would: (1) make them "[un]noticeable to the unaided eye;"² (2) ensure acceptable contrast; or (3) improve the overall quality of the display. The Office Action also fails to cite anything in the prior art suggesting that one should make the partitioning paths have a minimal path width defined by process parameters used for fabricating the conductor pattern to obtain such benefits.

² Indeed, the Office Action has not even cited a prior art reference stating that partitioning paths are ever visible to "the unaided eye" or that this presents any kind of problem.
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Applicants respectfully submit that Morimoto does not disclose or suggest a feature wherein parts of the conductor pattern which define pixels are substantially mutually separated by partitioning paths having a minimal path width defined by process parameters for fabricating the conductor. Indeed, to the extent that Morimoto reveals anything, FIGs. 2 and 7 seem to indicate sharp corners throughout the partitioning path, instead of a curved shape which could provide a minimal path width. This would appear to be contrary to the device claimed in claim 1.

Accordingly, for at least these reasons, it is respectfully submitted that the device of claim 1 is patentable over Morimoto.

Claims 3-5

Claims 3-5 depend from claim 1 and are therefore deemed patentable over Morimoto for at least the reasons set forth above with respect to claim 1, and for the following additional reasons.

Claim 3

Among other things, the display device of claim 3 includes partitioning paths having a substantially constant path width.

Applicants respectfully submit that Morimoto discloses no such feature.

Again, Morimoto itself appears to be silent about the width of the spacing between conductors. However, the Office Action stated that such a feature is shown in FIG. 7.

Applicants respectfully disagree.

The Examiner has merely divined that the spacing between conductors is substantially constant from nothing more than his own visual interpretation of FIG. 7. However, Applicants respectfully submit that this visual interpretation is wrong. One skilled in the art inspecting FIG. 7 Morimoto would see the numerous sharp corners throughout the partitioning path, instead of a curved shape which could provide a substantially constant path width. The width at these sharp corners is self-evidently greater than the width along the sides. Accordingly, the partitioning paths do not have a substantially constant path width. Thus, FIG. 7 of Morimoto appears to be contrary to the device claimed in claim 3.

Accordingly, for at least this additional reason, it is respectfully submitted that the device of claim 3 is patentable over Morimoto.

Claim 5

Among other things, in the display device of claim 5, at least 80% of the partitioning paths have a minimal path width.

Applicants respectfully submit that Morimoto discloses no such feature.

The Office Action stated that such a feature is shown in FIG. 7. Applicants respectfully disagree.

As noted above, Applicants have defined the term minimal path width in the specification.

Also as noted above, Morimoto does not disclose or suggest providing a minimal path width between adjacent parts of the conductor pattern. Furthermore, it is not possible from inspection of FIG. 7 to determine that any portion of the partitioning paths have a minimal path width - and it is certainly not possible to determine that 80% have a minimal path width. Morimoto is again silent.

Also, regarding the statement in the Office Action that Applicant's disclosure teaches that minimal paths are not achieved in places where the partition paths form a corner, that is true. But that is completely different from teaching that minimal path widths are not achieved only in places where the partition paths form a corner. That is NOT taught by Applicant's disclosure. Applicants submit that one cannot tell from FIG. 7 that more than 80% of the partitioning paths have a straight or curved path. Moreover, even assuming, *arguendo*, that more than 80% of the partitioning paths in FIG. 7 of Morimoto did have a straight or curved path, that would not mean that 80% of the partitioning paths have a minimal path width.

Accordingly, for at least this additional reason, it is respectfully submitted that the device of claim 5 is patentable over Morimoto.

Khan

Claim 1

Among other things, in the display device of claim 1 includes a conductor pattern, parts of which define pixels, wherein at least within the viewing area of the

display device, the conductor pattern, viewed transversely to the substrate along a direction from the conductor pattern toward the substrate, substantially completely covers the corresponding part of the first substrate.

No such feature is suggested by Khan.

The Office Action states that Khan discloses a plurality of elongated electrode strips each having a width of 244 microns and a space therebetween of 15-20 microns.

However, Khan never gives any hint or suggestion at all that these elongated electrode strips extend to substantially cover the entire viewing area of the display device. Khan does not indicate the extent of these elongated electrode strips in either direction (either the length or width of the device), and nothing can be discerned in this regard from FIG. 6, cited by the Examiner, which does not show an entire viewing area of the display.

The Office Action states, without citation or support, that it would have been obvious to have the electrode strips extend to substantially cover the entire viewing area of the display device.

M.P.E.P. 2143.01 provides that:

"THE PRIOR ART MUST SUGGEST THE DESIRABILITY OF THE
CLAIMED INVENTION"

and

"The level of skill in the art cannot be relied upon to provide the suggestion to combine references. Al-Site Corp. v. VSI Int'l Inc., 174 F.3d 1308, 50 USPQ2d 1161 (Fed. Cir. 1999)."

See also, In re Lee, 61 USPQ2d 1430, 1434 ("the examiner can satisfy the burden of showing obviousness of the combination only by showing some objective teaching in

the prior art or that knowledge generally available to one of ordinary skill in the art would lead the individual to combine the relevant teachings of the references").

Here, the Office Action fails to cite anything in support of the conclusory rejection. The Office Action fails to even establish that such a feature is even possible with a device such as Khan's.

Accordingly, Khan does not disclose or suggest a display device having a conductor pattern, parts of which define pixels, wherein at least within a viewing area of the display device, the conductor pattern, viewed transversely to the substrate along a direction from the conductor pattern toward the substrate, substantially covers the corresponding part of the first substrate.

Furthermore, in the display device of claim 1, the parts of the conductor pattern are substantially mutually separated by partitioning paths having a minimal path width defined by process parameters for fabricating the conductor.

Khan does not disclose providing any minimal path width between adjacent parts of the conductor pattern. The Examiner has stated that the spacings between electrodes in Khan are 15-20 microns.

As explained above with respect to Morimoto, this is not a minimal path width defined by process parameters for fabricating the conductor. Khan makes no mention of minimal path widths and Applicants respectfully submit that the bare numerical values quoted by the Examiner do not disclose or suggest the specifically defined features of Applicants' claimed invention.

The Office Action states, without citation or support, that it would have been obvious to

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Here, the Office Action fails to cite anything in support of the conclusory rejection. In particular, the Office Action fails to cite anything in the prior art suggesting that one should make the partitioning paths have a minimal path width defined by process parameters (1) to increase the area of the display that is optically controllable;" (2) to improve the contrast of the display; or (3) to provide images the appearance of being continuous to the unaided eye.

Furthermore, such a suggestion flies in the face of Khan's explicit disclosure that the partitioning paths on either side of the electrode strips have different widths (15 microns on one side; 20 microns on the other). How can the partitioning path having the width of 20 microns have a minimal path width as defined by process parameters when another partitioning path in the same device has a width of 15 microns?

Accordingly, for at least these reasons, it is respectfully submitted that the device of claim 1 is patentable over Khan.

Claims 3 and 5-9

Claims 3 and 5-9 depend from claim 1 and are therefore deemed patentable over Khan for at least the reasons set forth above with respect to claim 1.

Claim 3

Among other things, in the display device of claim 3 the partitioning paths having a substantially constant path width.

Applicants respectfully submit that Khan discloses no such feature. Indeed, since Khan explicitly discloses that within the same device the width varies between

15 and 20 microns, the partitioning paths cannot have a substantially constant path width.

Claim 5

Among other things, in the display device of claim 5, at least 80% of the partitioning paths have a minimal path width.

Applicants respectfully submit that Khan discloses no such feature. Indeed, since Khan explicitly discloses that within the same device the width varies between 15 and 20 microns, it seems apparent that at least 80% of the partitioning paths do not have a minimal path width.

Claim 10

The device of claim 10 includes a first conductor pattern on a side of the first substrate nearest the second substrate, defining pixels of the display device and, within a viewing area of the device, substantially completely covering the first substrate, and a second conductor pattern, on a side of the second substrate nearest the first substrate, that substantially completely covers the second substrate.

No device having such a combination of features is disclosed by Khan.

The Examiner states that Khan discloses a plurality of elongated electrode strips each having a width of 244 microns and a space therebetween of 15-20 microns.

However, as noted above, Khan never gives any hint or suggestion at all that these elongated electrode strips extend within a viewing area of the device to substantially completely cover any substrate. Khan does not indicate the extent of these elongated electrode strips in either direction (either across the length or the width of the substrate) and such cannot be seen in FIG. 6.

Again, the Office Action states, without citation or support, that it would have been obvious to have the electrode strips extend to substantially cover the entire viewing area of the display device.

Again, Applicants respectfully traverse that statement.

Therefore, Khan does not suggest a display device having a first conductor pattern on a side of the first substrate nearest the second substrate, defining pixels

of the display device and, within a viewing area of the device, substantially completely covering the first substrate, and a second conductor pattern, on a side of the second substrate nearest the first substrate, that substantially completely covers the second substrate.

Accordingly, for at least these reasons, it is respectfully submitted that the device of claim 10 is patentable over Khan.

Claims 11 and 13-14

Claims 11 and 13-14 depend from claim 10 and are therefore deemed patentable over Khan for at least the reasons set forth above with respect to claim 10, and for the following additional reasons.

Claim 13

Among other things, the device of claim 13 includes first and second partitioning paths, each of which has a minimal path width along at least 80% of a length thereof.

As noted above with respect to claim 1, Applicants respectfully submit that Khan does not disclose that the first and second partitioning paths having a minimal path width.

Accordingly, for at least this additional reason, it is respectfully submitted that claim 13 is patentable over Khan.

Young

Claims 1, 3, 5 and 15-19

The Office Action rejected claims 1, 3, 5 and 15-19 under 35 U.S.C. § 103 over Young.

The present application claims priority from European Patent Application 00201204.5 filed on 34 April 2000 (a certified copy of this priority document filed in the English language was submitted to the U.S. Patent & Trademark Office on 27 March 2001). Meanwhile, Young was published on 28 November 2000.

Accordingly, Young only qualifies as prior art under 35 U.S.C. § 102(e).

STATEMENT OF COMMON OWNERSHIP

Both the present application 09/817,980 and U.S. Patent 6,153,254 ("Young") were, at the time the invention of Application 09/817,980 was made, owned by, or subject to an obligation of assignment to the same company.

Therefore, Applicants respectfully submit that Young is not properly prior art for the present application under 35 U.S.C. § 103.

Accordingly, withdrawal of the rejection of claims 15-19 under 35 U.S.C. § 103 over Young is respectfully requested.

CONCLUSION

In view of the foregoing explanations, Applicants respectfully request that the Examiner reconsider and reexamine the present application, allow claims 1 and 3-19 and pass the application to issue. In the event that there are any outstanding matters remaining in the present application, the Examiner is invited to contact the undersigned attorney to discuss these matters.

Respectfully submitted,

Date: 3/15/04

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